

# Scenario A1

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- Accord + All AFRP
- April-May VAMP + QWEST + Jun-Oct Accord E/I
- JPOD + Expanded Banks + Intertie
- Kern WB + Madera Ranch GWB
- Delta Wetlands + Shasta Enlargement



# Scenario A1 (con't)

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- 135 TAF/yr - Ave year deliveries from projects
- 107 TAF/yr - Dry period deliveries from projects

## Using an Accord Baseline

- 31 TAF/yr - Ave year deliveries from projects
- -62 TAF/yr - Dry period deliveries from projects



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# *Operational Scenarios for Stage 1*

DEFT-NoName Coordination  
Team

November 23, 1998



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# *Biological Science Issues*

- What is Controlling Species Populations?
  - Importance of Flow
  - Importance of Habitat
  - Importance of Exports
  - Importance of other factors and what's controllable
- What is biological effectiveness of existing and proposed standards?



# Barriers

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- **Delta Cross Channel**
  - Closed to prevent Sacramento River salmon smolts from entering central Delta
  - Could have impacts on water supply and water quality
- **Head of Old River Barrier**
  - Closed to prevent San Joaquin river fish from entering south Delta region
  - Could have impacts on water supply, water quality, and water stages in the south Delta



# Screens

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- **2,000 cfs Hood diversion test facility**
  - Fisheries impacts
  - Water supply and water quality benefits
- **Head of CCF screening and fish handling facility**
  - Size as stand alone or in combination with Tracy and Intertie
  - Low head pumps, dredging, and water quality/stage requirements may require new analysis of SOD impacts
- **Tracy demonstration /testing screen and handling facility**
  - 2,500 test module or full production screen



# Modify Operational Patterns at Pumps

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- Modify operational patterns at export pumps to :
  - Reduce direct fish mortality
  - Reduce in-direct fish mortality
  - Increase water supply.
  - Improve water quality.



# More Prescriptive Approach (Type 1)

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- More restrictive standards to augment existing standards
- Gain water supply by flexing standards and new supplies
- No environmental water account
- Additional Standards over ACCORD + All AFRP
  - Oct-Jan: Supplement with QWEST
  - Nov-Jan: DCC closed
  - Feb-Mar: Replace E/I with days of reduction in exports and QWEST
  - Apr-June: 75 day VAMP

A & B



## More Prescriptive Approach (Type 1) - Evaluation

- Water Supply
  - Accord + All AFRP + Apr-May VAMP + QWEST + June - Oct Accord E/I
  - \*Dry Period:
    - 167 TAF
  - \*73-Year average, -355 TAF
- Biological Evaluation
  - Fish Protection: Moderate to good
  - ESA Assurances: Immediate good level
  - Multi-species benefits: Maximizes benefits in average year
  - Adaptive management: Low to medium. More likely in Stage 2

\* Compared to ACCORD + All AFRP



## Elimination of E/I and use of EWA (Type 2)

- Water that would have applied to E/I goes to EWA
- EWA no storage priority
- Water produced from NonName actions shared
- Standards
  - ACCORD + ALL AFRP - E/I

C,D, & F



## ***Elimination of E/I and use of EWA (Type 2)- Evaluation***

- Water Supply
  - Accord + All AFRP + JPOD + ISDP + No E/I
  - \*Dry Period: +196 TAF
  - \*73-Year average, +398 TAF
- Biological Evaluation
  - Fish Protection: Moderate to good
  - ESA Assurances: Dependent on new water and structure of EWA
  - Multi-species benefits: Annual varying benefits, focused on ESA assurances.
  - Adaptive management: High, flexibility to test hypothesis

\* Compared to ACCORD + All AFRP



## ***Export restrictions based on salvage (Type 3)***

- Export restrictions based on direct mortality at pumps
  - Water produced by restrictions and Noname actions shared and stored in EWA
  - Production and mortality credits
- Standards
  - ACCORD + ALL AFRP - E/I



## ***Export restrictions based on salvage (Type 3) - Evaluation***

- Water Supply
  - Accord + All AFRP + No E/I + JPOD + ISDP + 99 days @ 1,500 cfs
  - \*Dry Period: -40 TAF
  - \*73-Year average, +145 TAF
- Biological Evaluation
  - Fish Protection: Fair to Moderate
  - ESA Assurances: Dependent on demonstrated effectiveness
  - Multi-species benefits: Initially limited
  - Adaptive management: limited to entrainment effects

\* Compared to ACCORD + All AFRP



## ***Sample Hybrid***

- Combined certainty of stricter standards with flexibility of EWA
  - Credit 150 TAF in San Luis reservoir to EWA on Oct 1 each year
  - Use JPOD and increased Banks to recover storage
- Standards
  - Accord + All AFRP -E/I
  - Mar-Jun:
    - 45-day Vamp + 15 discretionary days

***Hybrid***



# Sample Hybrid - Evaluation

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|---|--|
| <ul style="list-style-type: none"><li>• <u>Water Supply</u></li><li>• Accord + All AFRP + No E/I + JPOD + ISDP + 61-day VAMP</li><li>• *Dry Period: +145 TAF</li><li>• *73-Year average, +303 TAF</li></ul> | <ul style="list-style-type: none"><li>• <u>Biological Evaluation</u></li><li>• Fish Protection: Moderate to good</li><li>• ESA Assurances: medium levels, depend on supply</li><li>• Multi-species benefits: Annual varying benefits<br/>Adaptive management: High, flexibility to test hypothesis</li></ul> |
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\* Compared to ACCORD + All AFRP



# Agenda

- EWA
  - Graphics (no numbers)
    - Share Gain
    - Filling of reservoirs
  - Key questions to be ask
  - Default Requirements
  - 1999 Ops

Water quality ops



# Type 1 lite

- Standards and water supply actions that could be phased in in two years.
- Water supplies are applied to meeting new standards after which additional supplies go to water users.

- Additional Standards over ACCORD + All AFRP
- Dec-Jan: QWEST criteria
- Feb: 7-day exports to 2,400 cfs
- Mar-Jun: QWEST criteria
- April-May: 45-day VAMP
- Nov-DEC: DDC closed

B1



# Type 1 lite - Evaluation

- Water Supply
- Accord + All AFRP + No E/I + QWEST + 45-day VAMP + JPOD + Banks (8.5K) + Kern WB
- Dry Period: +60 TAF
- 73-Year average, +9 TAF

- Biological Evaluation
- Fish Protection: Moderate to good
- ESA Assurances: Moderate to good
- Multi-species benefits: Maximizes benefits in average year
- Adaptive management: Low to medium. More likely in Stage 2

Compared to ACCORD + All AFRP



# NoName Water Quality Operations Actions

	Year						
Ops-related Water Quality Measure	1	2	3	4	5	6	7
<b>In-Delta water quality</b>							
Small Hood diversion to Mokelumne	Study/Permitting			Construct.			
Adjusted minimum outflows in the fall							
<b>Improved export water quality (within-Project)</b>							
Selective San Luis filling							
Releasing low quality water in wetter years							
Utilization of Joint Point for water quality							
Central Delta Intake							
Expanded Los Vaqueros Reservoir							→
In-Delta Island Storage							
<b>Improving delivered water quality</b>							
Circumventing San Luis							
Enlarged Pacheco Reservoir							→
Restructured SCWWD intake							
Demand shift/Cont. Use with MWD							
<b>Water Exchanges or Transfers</b>							
Pine Flat and Millerton reservoirs							
Exchanges for SCWWD							
<b>Miscellaneous</b>							
Bifurcation of the California Aqueduct							
Multiplexing California Aqueduct deliveries							
Desalination							

CHILD  
BY DELTA  
PROGRAM